

REDUCE MINER OVER-EXPOSURE TO RESPIRABLE DUST

Goal 3.1B: Reduce by five percent the percentage of coal dust and silica dust samples that are out of compliance for coal mines and metal and nonmetal high risk mining occupations, respectively.

Coal Dust	Silica Dust
Baseline: 12.9%	Baseline Index: 100
Goal: 12.3%	Goal: < 90
Actual: 11.4%	Actual Index: 75.1
Data as of 1/6/2000	Data as of 1/6/2000

Coal Dust

Results: The Department exceeded the goal for reducing the percentage of noncompliant coal dust samples. The FY 1999 coal dust sampling results indicated that 11.4 percent of samples are not in compliance with the coal mine dust standard (679 out of 5,969 inspector samples). This

represents an 11.6 percent reduction from the FY 1998 baseline where 12.9 percent of samples were not in compliance.

Analysis of Results: The 11.6 percent reduction in the percentage of noncompliant samples is more than twice the five percent FY 1999 target. Since this is the first year of measured results, the Mine Safety and Health Administration (MSHA) will review future goals as a trend develops.

Silica Dust

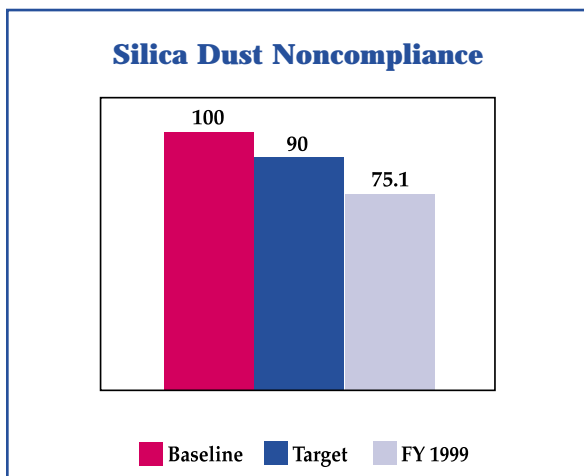
Results: FY 1999 silica dust sampling results show an index point reduction of 24.9 versus a goal of 10 index points – or a 75.1 index compared to a target of 90 as a measure of samples not in compliance compared to the baseline.

Analysis of Results: The silica dust result is an index measurement – a weighted comparison between the current year samples and a

Trained mine rescuers move out in response to a 1924 coal mine explosion near Benwood, W. Va. None of the 119 miners underground survived.

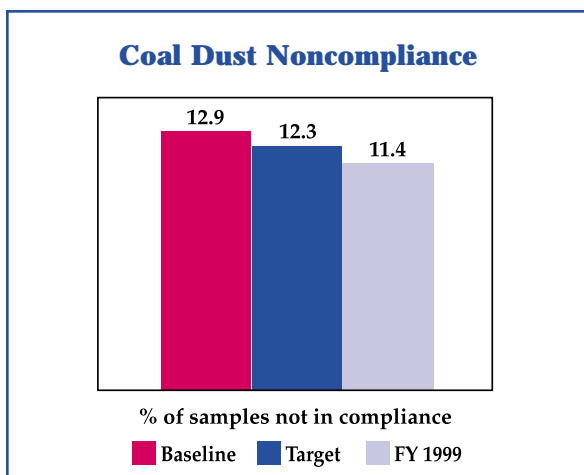


comparable set of samples from the 1997-1998 sample population. A 100 index result means that current year samples have the same compliance-noncompliance ratio as a comparable set of baseline samples. The FY 1999 target was to reduce noncompliant samples to below a 90

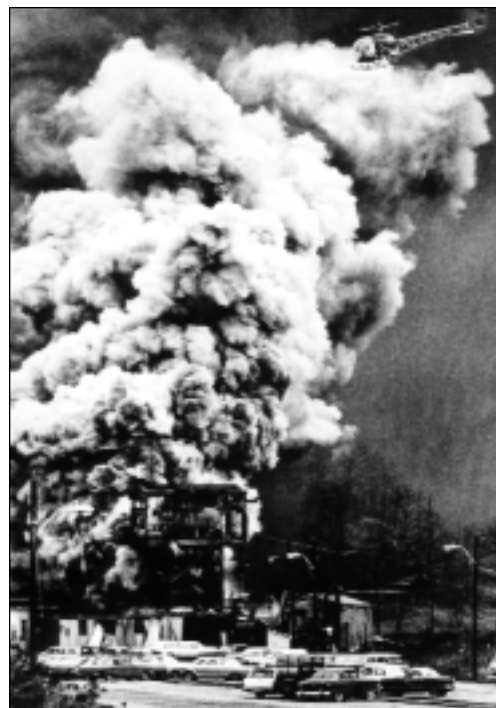


index figure. The 75.1 index figure is based on 124 noncompliant samples out of 980 samples (due to the weighted computation, the 75.1 index figure is not a straight calculation).

Strategies: In FY 1999, MSHA campaigned against coal miner's black lung disease by: releasing a publication on strategies to control dust in longwall mining; posting selected coal mine dust sampling data on the MSHA website; and taking confidential x-rays to collect data on black lung cases. In addition, MSHA continued its cooperative effort with the



Institute of Occupational Safety and Health (NIOSH) to develop a new technology for real-time continuous dust monitoring in underground coal mines, worked with metal and



Smoke poured from the entrance of the Farmington, W. Va, No. 9 mine in the wake of a 1968 explosion that killed 78 coal miners. The disaster spurred passage of the Federal Coal Mine Health and Safety Act of 1969.

Source: Copyright 1968 *The Charleston Gazette*. Used with permission.

nonmetal mine operators to improve silica dust sampling, published an operators' guide to improve operator sampling, and continued a cooperative effort to train operators to conduct their own silica dust sampling.

Goal Assessment and Future Plans:

During FY 2000, MSHA plans to continue the strategies used to successfully reduce coal and silica dust in FY 1999. Coal and silica dust metrics are new, so trends still need to be established. Since operators are currently being trained on methods to improve their sampling, MSHA intends to continue using inspector samples rather than operator samples to ensure reliability and consistency. ■

REDUCE WORKPLACE INJURIES AND ILLNESSES

Goal 3.1C: Reduce three of the most prevalent workplace injuries and causes of illnesses by three percent in selected industries and occupations.

Results: DOL met its goal for reducing silica and lead exposure severity. Based on the Bureau of Labor Statistics' Calendar Year (CY) 1997 data, it appears that DOL will likely also meet its goal for reducing amputations.

Program Description: The three hazards listed in the accompanying table continue to be prevalent in many workplaces.

Analysis of Results: *Silica* – In FY 1999, average exposure severity at establishments with silica interventions was 39 percent below the baseline. In order to reduce silica exposures, a nationwide Special Emphasis Program (SEP) was implemented in FY 1996 to focus inspections on areas where high silica exposure was likely. In addition, training grants addressing silica exposures in general industry and highway and bridge construction were funded. A Silica Technical Advisor available on the Department's website provides training and information to assist employers and workers in identifying potential silica hazards in their workplaces, as well as selecting control options.

Lead Exposures – In FY 1999, the average lead exposure severity at establishments with lead interventions was 17 percent less than

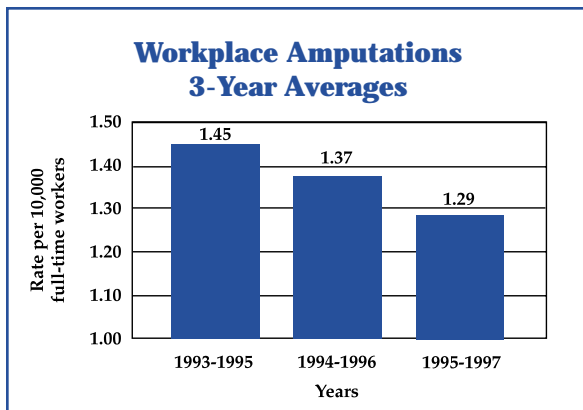
the baseline. Potential exposures include construction work involving welding, cutting, or brazing on lead paint surfaces, smelting operations in which lead is recovered from batteries, and radiator repair shops. A nationwide SEP focusing on lead in construction was implemented with plans to expand it to all industries. An outreach program to the automotive radiator repair industry was in effect during FY 1999. An expert system³ addressing lead in construction and a general industry test version became available on the DOL website.

Amputations – DOL expects to surpass the goal of a three percent reduction in the amputation rate from the CY 1993-1995 average level. DOL is using a three year

moving average to measure the goal, which is a more stable estimate of performance since the variability that occurs from year to year is reduced. The rate of amputations has been decreasing since CY 1993 as shown by three-year moving averages on the next page. Safety inspections are being targeted to employers with machines that cause the greatest number of amputations: power presses, shears, slitters, slicers, and saws. In FY 1999, several outreach efforts to address amputations were initiated, including an expert system

Hazards	Baseline	Actual	Percentage Change
Silica Exposures*	3.6 average exposure severity** FY 1996	2.2 FY 1999	-39%
Lead Exposures*	3.0 average exposure severity** FY 1995	2.5 FY 1999	-17%
Amputations***	1.45 per 10,000 CY 93-95	1.29 per 10,000 CY 95-97***	-11% CY 95-97***
*Source: OSHA Integrated Management Information System . **Severity is defined as the exposures measured divided by the Permissible Exposure Limit (Silica and Lead). ***CY 1999 BLS Annual Survey of Occupational Injury and Illness (Amputations) data will be available in April 2001.			

³Online expert systems elicit information from users and advise them how the regulations apply to their situations.



and posting a web-based interactive program on the Internet on the Lockout/Tagout standard and awarding five grants to provide training to prevent amputations.

Goal Assessment and Future Plans:

The Department plans to improve its regulation of occupational exposure to crystalline silica by publishing a proposed revised standard in FY 2001. In addition, DOL will continue to focus on reducing amputations through more on-site consultation, training, education and outreach programs. ■

Construction work can include exposure to silica dust, noise, vibration, and other hazards.

